



# Roman Science Interest Group Kickoff

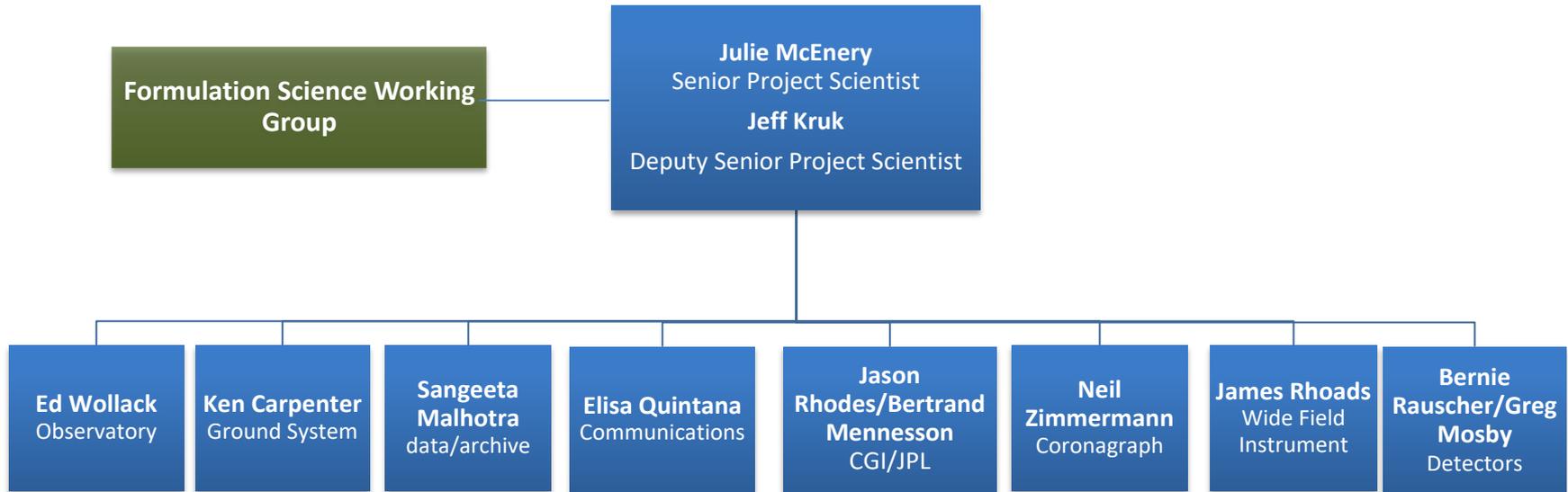
**Julie McEnery**

October 7, 2020

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- NASA GODDARD SPACE FLIGHT CENTER • JET PROPULSION LABORATORY •
- L3HARRIS TECHNOLOGIES • BALL AEROSPACE • TELEDYNE • NASA KENNEDY SPACE CENTER •
- SPACE TELESCOPE SCIENCE INSTITUTE • IPAC • EUROPEAN SPACE AGENCY •
- JAPAN AEROSPACE EXPLORATION AGENCY • LABORATOIRE D'ASTROPHYSIQUE DE MARSEILLE •
- CENTRE NATIONAL D'ÉTUDES SPATIALES • MAX PLANCK INSTITUTE FOR ASTRONOMY •

# Project Science Org Chart



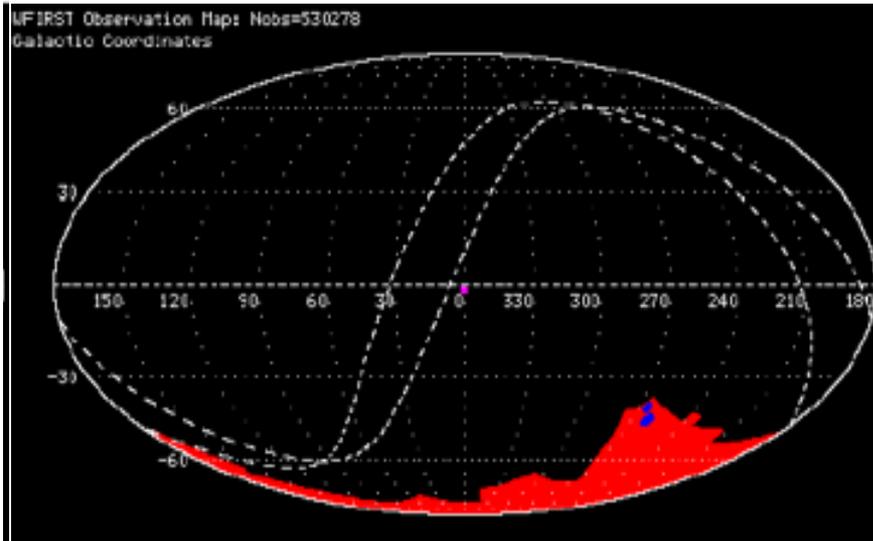
- Supernova Survey/Foley, Supernova Survey/Perlmutter
- Nearby Galaxies
- Extragalactic
- Cosmology/HLS
- Exoplanet Coronagraphy/Macintosh, Exoplanet Coronagraphy/Turnbull
- Archival Research
- Cosmic Dawn
- Exoplanet Microlensing
- Milkyway
  
- ~300 scientists in total
  - scientific performance requirements related to the specific science area,
  - design of overall observational strategy concept,
  - science data analysis techniques,
  - ground and space calibration requirements,
  - science simulations, precursor observations,
  - ground calibration, observational needs, data processing, ancillary data collection/incorporation, analysis, dissemination and documentation of the proposed science investigation.
  
- Current science team contracts expire next year
  - Need to decide what should follow them

Adjutant Scientists  
David Spergel - WFI  
Jeremy Kasdin - CGI

- Detector Calibration
- Data/software standards
- Detector Characterization
- Scheduling/survey planning
- WFI Simulations
- Astrometry
- Grism/Prism
- CGI Simulations, CGI Targets, CGI post processing, CGI calibrations, CGI Filters



- 1:00 - 1:20 Jeff Kruk: Welcome, introduction of panel, and charter
- 1:25 - 1:40 Chris Hirata: What is Count Rate dependent NonLinearity (CRNL)?
- 1:45 - 2:05 Susana Deustua: Historical background (HST)
- 2:20 - 2:40 Chris Hirata + Rebekah Hounsell: Science case for understanding and correcting CRNL
- 2:45 – 3:00 Maxime Rizzo: Motivate RCS requirements
- 4:05 - 4:45 Maxime Rizzo: Overview of RCS architecture and Functionality
  
- Day 2
- 1:30 - 1:45 Stefano Casertano: Observatory RCS Operations Concept
- 1:50 - 2:20 Greg Mosby: Technical update from Detector Characterization Lab measurements
- 2:35 - 3:00 Rebekah Hounsell & David Rubin: Simulations of supernova science
- 3:05 - 3:30 James Rhoads: Plausible performance shortfalls and mitigation plans



**Microensing Survey:** 2 deg<sup>2</sup>, 15 min cadence for W filter, 12 hour cadence for R or Z and Y or J

**Supernova Survey:** 14 deg<sup>2</sup>, (wide), 5 deg<sup>2</sup> (deep), 4 filters (R, Z, Y, J – wide) / (Z, Y, J, H – deep), 5 day cadence, and prism spectroscopy

**High Latitude Survey:** 2000 deg<sup>2</sup> (wide), 20 deg<sup>2</sup> (deep), 4 filters (Y, J, H, F) for wide and deep fields and grism spectroscopy

5 sigma J-band sensitivity

	HLS Wide	HLS Deep	SN Wide	SN Deep	ML
Per Visit	-	-	25.5	26.6	27.5
Integrated	26.95	28.2	28.3	29.4	--

- What the DRM is:
  - A required product at major mission reviews
  - An existence proof that mission objectives can be met in required lifetime
  - A tool for exercising the ground system
  - Does proposal system support all the observing modes?
  - Can planning/scheduling tools build the timeline & command loads?
  - Will command loads execute on the spacecraft & instrument simulators?
  - Does observing efficiency in simulator match expectations?
  - Does telemetry support data processing of all observing modes?
  - Are pipeline products properly ingested into the archive?
- What the DRM is not:
  - The actual observing plan
  - We need to define a process to produce the observing plan

- PI's of the Science Investigation teams
- Roman Adjutant Scientists
- Roman Project Scientist
- Roman Program Scientist
- Representatives from SOC/STSci/SSC/IPAC
  
- Telecon every month, F2F meeting 2/year

- Goals:
  - Provide input to the WFIRST Project/Program on structure of future science team proposal calls, user support functions at both STScI and IPAC, considerations for how to decide on time allocation, and other science needs as requested by the project (will evolve with time)
  - Provide a visible avenue for broad-based science community to engage with the Roman project.
  - Provide a central forum for science input to all WFIRST groups responsible for WFIRST-WFI science community services, support and engagement (HQ, GSFC, STScI, IPAC)
  - Plan (eventually) for members to have 3 year terms - but we don't want everyone to leave at once, would like to have ~regular calls for new members
  - THANK YOU!

## A comment



- There won't be enough time in this meeting to have sufficient discussion about observing program definition or considerations for future science teams/community support
  - Can we spend some of the discussion time at the end of today's agenda to discuss when to have future meetings on specific topics?